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Environmental Target Levels for CALFED Urban Water Quality Parameters of Concern

Parameter of Concern	Geographic Location	Water Quality Target Levels	Comments
Bromide	Delta; Water Supply Intakes	< 50 µg/L	Target level based on the CUWA Expert Panel Report recommendations (Bay-Delta Drinking Water Quality Criteria, December, 1996). Expert Panel assumed future drinking water regulatory scenario for disinfection by-product (DBP) control and inactivation of <i>Giardia</i> and <i>Cryptosporidium</i> based on the proposed Stage 2 D/DBP Rule and proposed Enhanced Surface Water Treatment Rule (ESWTR). The bromide target level is constrained by the formation of bromate when using ozone to inactivate <i>Cryptosporidium</i> .
Nutrients (Nitrate)	Delta; Water Supply Intakes	<ul style="list-style-type: none"> No increase in nitrate levels Decrease in phosphorus levels is desirable 	<p>Nutrients are a critical reservoir management issue. Nutrient levels are a determining factor governing the growth of taste-and-odor producing algae in water storage reservoirs. SWP supplies are nitrogen-limited; however, phosphorus is present in great excess. This is a problem with respect to the growth of blue-green algae, which can fix their own nitrogen.</p> <p>Note: Water quality impacts of nutrients are driven by reservoir management issues as opposed to human health effects; as a result, use of the MCL for nitrate (as N) of 10 mg/L is <u>not</u> appropriate.</p>
Pathogens	Delta; Water Supply Intakes	<p>< 1 oocyst/100L for <i>Giardia</i> and <i>Cryptosporidium</i></p> <ul style="list-style-type: none"> Sources of pathogens should be located away from drinking water intakes. 	Desirable target levels are based on likely future regulatory scenarios under the ESWTR that will base required levels of pathogen removal/inactivation treatment on pathogen density in source water. Future regulations may require additional log removal requirements for <i>Giardia</i> and removal requirements for <i>Cryptosporidium</i> . Increasing treatment for removal of pathogens makes it more difficult to control the formation of DBPs. To balance disinfection requirements for controlling pathogens with the production of DBPs, selection of a Bay-Delta alternative should not result in degraded water quality necessitating increased removal requirements for pathogens.

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Salinity (TDS)	Delta; Water Supply Intakes	<p>10-yr average: < 220 mg/L Monthly avg.: < 440 mg/L</p> <ul style="list-style-type: none"> Reduced peaks in TDS levels are necessary to limit salinity-related impacts on water supply demand, local resource programs, and economic impacts. 	<p>Target levels for TDS would allow compliance with the TDS objectives contained in Article 19 of the SWP Water Service Contract.</p> <p>The average TDS levels in SWP supplies over the last ten years have consistently exceeded the 220 mg/L (10-year average) SWP objective. The ten year averaging period for the 220 mg/L objective is too long to be sufficiently protective of source water quality. MWD staff are currently exploring the development of appropriate alternative TDS objectives for shorter time frames (i.e., 1-year and 6-month averages) and will forward that information to CALFED when available.</p> <p>The SWP TDS objective of 440 mg/L (monthly average) is a problem for water resource management programs, especially in the months of April through September, and there is a real need to reduce peaks in TDS in SWP supplies.</p> <p>Consistently low TDS levels are needed to minimize the following salinity-related impacts:</p> <ul style="list-style-type: none"> Increased demand for Delta water supplies when such water is used to blend with other higher salinity water sources. Adverse impacts on water recycling and groundwater replenishment programs, which depend on Delta water supplies to meet local resource program salinity objectives. Failure to develop local resource programs may result in increased demand on Delta exports. Economic impacts on industrial, residential and agricultural water users. <p>Note: Salinity is a resource management issue for urban water suppliers; as a result, use of the secondary MCL for TDS of 500 mg/L as a target level is <u>not</u> appropriate and would allow degradation of source water quality.</p>

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TOC	Delta; Water Supply Intakes	< 3.0 mg/L	Target level based on the CUWA Expert Panel report recommendations (Bay-Delta Drinking Water Quality Criteria, December, 1996). Expert Panel assumed future drinking water regulatory scenario for DBP control and inactivation of <i>Giardia</i> and <i>Cryptosporidium</i> based on the proposed Stage 2 D/DBP Rule and proposed ESWTR. The proposed D/DBP Rule requires increased levels of TOC removal as TOC concentrations in source waters increase. The recommended TOC target level is constrained by the formation of total trihalomethanes when using enhanced coagulation for TOC removal and free chlorine to inactivate <i>Giardia</i> .
Turbidity	Delta; Water Supply Intakes	50 NTU	Reduced variability in turbidity is needed to improve treatment plant performance. When source water turbidity increases, water is more difficult and costly to treat. Also, increased turbidity reduces protection from pathogens because turbidity interferes with disinfection. Note: The turbidity level of 0.5 NTU is a treatment technology requirement for treated drinking water supplies, and use of this value is not necessary for raw water supplies.